SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Water Reservation Overview for the Picayune Strand Restoration Project

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Governing Board Workshop
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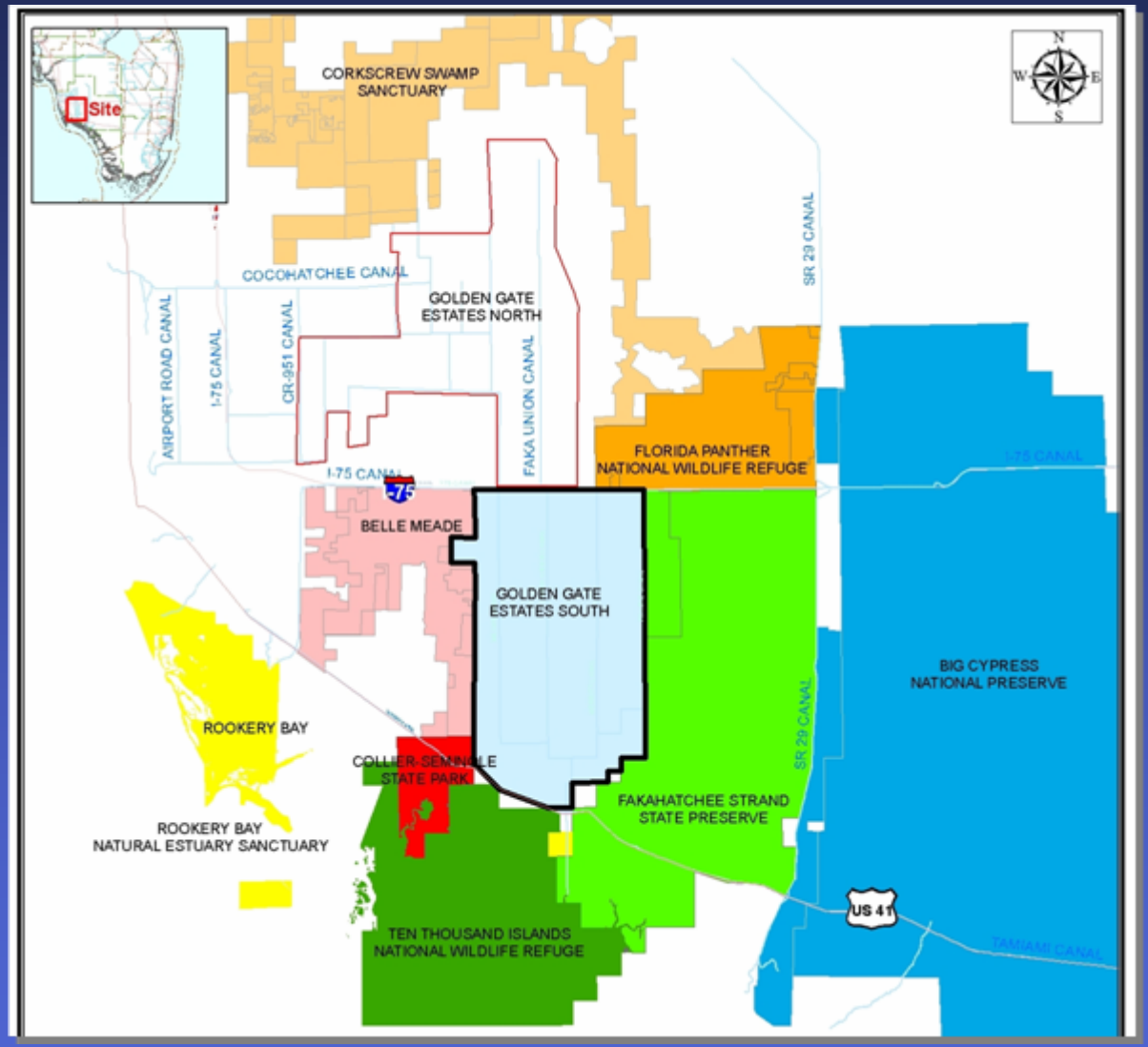
Project Location



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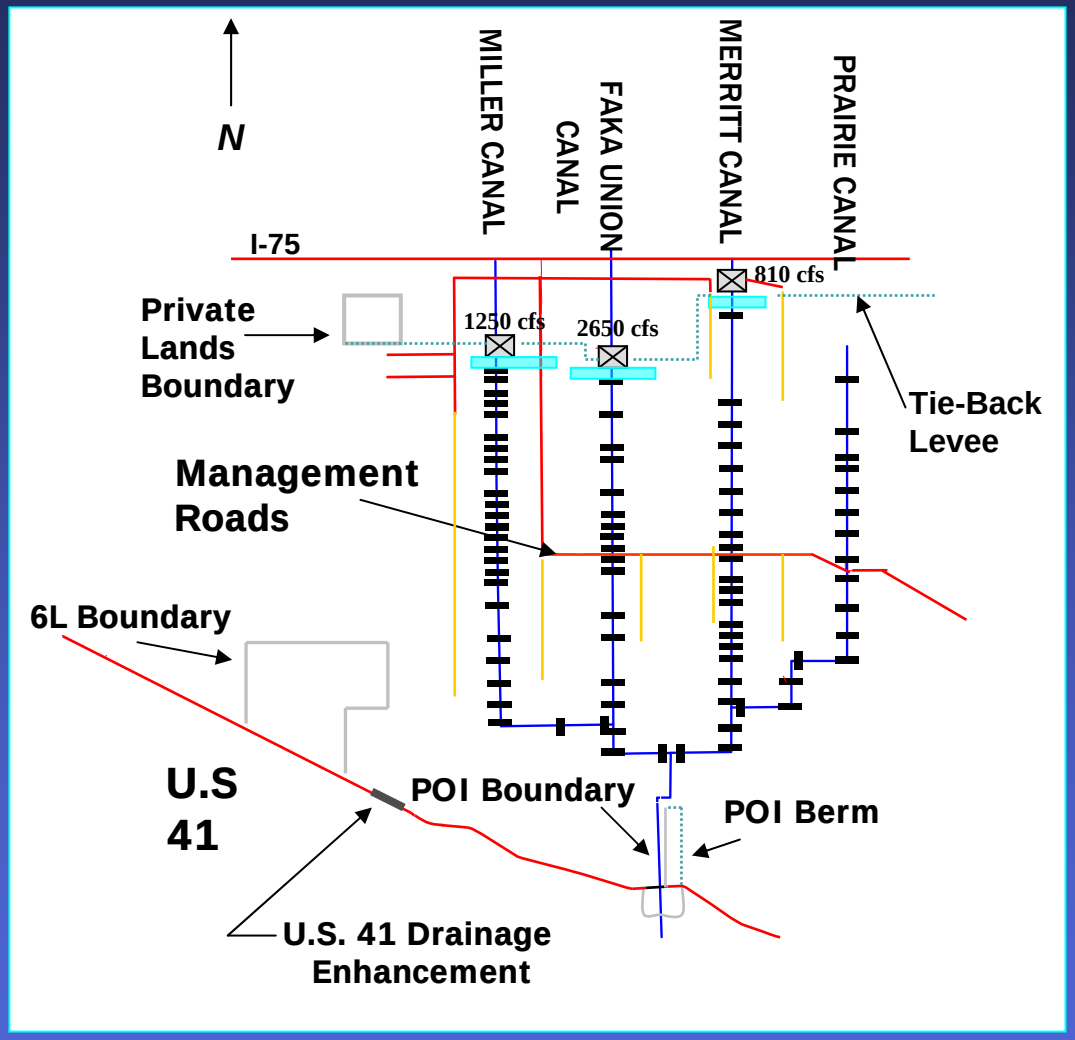
Restoration Plan (PIR 2004)



ELEMENTS

- 3 Spreader Canals
- 3 Pump Stations
- Canal Plugs
- Primary All Weather Roads
- Secondary Roads
- Private Lands Boundaries
- Berm

Restoration Progress to Date

- Tamiami Trail culverts
- Prairie Canal plugging
- Soil remediation (50% complete)
- Structure demolition and trash removal
- Road removal (25% complete)

Hydrology is the Key to Achieving Expected Project Benefits

- **Protection of water made available for the natural system by the Project required by Section 601(h) of the 2000 Water Resources Development Act (WRDA)**
  - State required to protect water for natural system using its reservation or allocation authority
- **State also agreed to protect existing water for the natural system using its reservation or allocation authority**

Why Protect the Water?

- WRDA 2000 requires that the reservation or allocation be complete prior to signing a Partnership Agreement to receive federal funding for Project construction and operation
- SFWMD has determined the reservation is the most appropriate tool to protect water for the Picayune Strand Restoration Project

What is a Water Reservation?

- A water reservation is a legal mechanism to set aside water from consumptive uses for the protection of fish and wildlife or the public health and safety
  - Authority: F.S. 373.223(4)
  - Programmatic Guidance: Department of Environmental Protection Rule F.A.C. 62-40.474

How is a reservation established?

- Rule Development
  - Peer Review of Technical Document
- Rule Making
- Rule Adoption
- Information on the Internet
  - Technical Document posted at:

www.sfwmd.gov/watersupplyruledevelopment

Scientific Peer Review

- Review of Technical Report entitled Draft PSRP Water Reservations Report
- Project Implementation Report (2004) is the source of data for the Technical Report
- Purpose: determine if the proposed linkage between hydrology and its associated effects on fish and wildlife is scientifically sound
- Review based on best available scientific and technical data

Scientific Peer Review

Chair of Scientific Peer Review Panel

John “Jack” Gentile, PhD

Harwell Gentile & Associates

Peer Panel Composition

- John H. Gentile, Ph.D., Chairperson
  - *Marine ecologist, risk assessment, and restoration*
- Paul Montagna, Ph.D.
  - *Estuarine ecologist, expertise in benthos and inflow effects on estuarine communities*
- Jeffrey M. Klopatek, Ph.D.
  - *Terrestrial, wetland, and ecosystem ecology*
- Michael Walters, PE, PG, PH
  - *Expertise in hydrology*

Purpose

- Determine if the technical information contained within the *PSRP Water Reservation Report,* the PIR, and other supporting documents provides a sound scientific basis for quantifying the water required for the protection of fish and wildlife

Panel Charge

- Review the *PSRP Water Reservation Report,* the PIR, and supporting documents
- Determine the sufficiency of the technical information (indicators, models, linkages, etc.)
- Evaluate the scientific basis for quantifying water needed for the protection of fish and wildlife

Panel Activities

- June 14 - Preview of PSRP, PIR, etc.
- June 23 - Site visit/helicopter flight
- June 24-25 - Peer Panel Meetings
- June 24-25 - Public Comment Period
- July 11 - Peer Panel Final Report
- August 13 – Present to Governing Board

Initial Impressions

- The compiled data and literature review provide a reasonable basis for the proposed water reservation
- The panel is confident that the conclusions based on the hydrologic component of this study are sound and support the proposed water reservation
- There is a lack of discussion and documentation of ecological models
- The documentation of the link between hydrologic change and ecological response is unbalanced across the system

Hydrology

- **Finding:** The water identified appears to be technically supported and the hydrologic model (MIKE SHE / MIKE 11) is appropriate and the most comprehensive of a suite of models used

- **Recommendation:** Assess annual variability in stream flow/rainfall and groundwater level trends to determine if the model predicted allocated withdrawals are accurate

Terrestrial Ecology

- **Finding:** The data, modeling, and literature reviewed provide a reasonable basis for the *PSRP Water Reservations* conclusions reached for the terrestrial and wetland model
- **Recommendation:** Data and literature are needed to support the conclusions that restoring hydrology and wetland vegetation will lead to the re-introduction of indigenous faunal indicators (e.g., fish, amphibians, and avian species)

Estuarine Ecology

- **Finding:** The estuarine system linkages provided in the *PSRP Water Reservations Report* are weak relative to those presented for the terrestrial system and provide insufficient justification for proposed salinity targets
- **Recommendation:** While new or additional studies are not needed, a stronger summary of existing studies, especially those that have occurred in the Rookery Bay NERR and CERP should be placed in the report to document the linkage between hydrology and salinity

Panel Recommendations

- The *PSRP Water Reservations Report* technically supports the concept of the proposed water reservation to protect fish and wildlife
- The linkages between hydrology and ecology are sound for the terrestrial/wetland but require further documentation for the estuary
- The *PSRP Water Reservations Report* must clearly delineate that there are two water reservations being proposed that includes the flow- salinity relationship with estuarine ecological targets
- The *PSRP Water Reservations Report* should address the concept of uncertainty for the indicators, models, targets, and linkages

Summary

- Project development, conceptual ecological models, hydrologic design, ecological indicators and linkages between hydrology and ecology are conceptually sound
- The documentation of the science supporting assumptions and linkages is unbalanced - the terrestrial is strong relative to the estuary
- Enhancements to improve documentation have been recommended and are being addressed

Bottom Line

- The Panel agrees that the draft *PSRP Water Reservations Report* technically supports the concept that the proposed water reservation will be protective of fish and wildlife, as long as the linkages are addressed with respect to the questions above
- The water identified as the target is defined as the pre-drainage condition and the documentation of environmental changes since drainage supports its selection as a target

Technical Report Additions

- Hydrology
  - existing conditions and annual variability data
  - expand on groundwater and its relationship to surrounding area
- Wetlands Ecology
  - plant community transition related to fire and hydrology
  - expand on water needed for wading birds and aquatic fauna
- Estuary Ecology
  - existing scientific reports establishing linkage between salinity targets and ecological response

Major Milestones

- Rule development initiated: February 2008
- Scientific peer review of technical report to support water reservation: June 24-26 2008
- Workshops to develop rules:

  June17, July 24, and August 27, 2008
- Present draft rules to WRAC: September 2008
- Revise technical report : October 2008
- Seek Governing Board approval to publish the final draft rule in Florida Administrative Weekly:

  October 2008

QUESTIONS

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